

DEPARTMENT OF THE NAVY
JUSTIFICATION OF ESTIMATES
FY 1992/FY1993 BUDGET ESTIMATES



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PROCUREMENT

WEAPONS PROCUREMENT, NAVY

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JUSTIFICATION OF ESTIMATES FOR FISCAL YEARS 1992 AND 1993

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Summary of Requirements

Activity 1 - Ballistic Missiles

Activity 2 - Other Missiles

Activity 3 - Torpedoes and Related Equipment

Activity 4 - Other Weapons

Activity 5 - Other Ordnance

Activity 6 - Spares and Repair Parts

Prepared by Date per phone call	
By	Date
Activity Codes	
Dist	Activity or Special
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Statement A, per phonecon with Wes McNair,
Offices of the Comptroller-Navy (NCHC-2),
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Vic LaChance DTIC-EDAB 3-23-91

WEAPONS PROCUREMENT, NAVY

For construction, procurement, production, modification, and modernization of missiles, torpedoes, other weapons, other ordnance and ammunition, and related support equipment including spare parts, and accessories therefor; expansion of public and private plants, including the land necessary therefor, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title; and procurement and installation of equipment, appliances, and machine tools in public and private plants, reserve plant and Government and contractor-owned equipment layaway [as follows: Ballistic Missile Programs, \$1,540,001,000; Other Missile Programs, \$2,935,256,000; MK-48 ADCAP Torpedo, \$350,291,000; MK-50 Torpedo, \$328,266,000; ASW Targets, \$26,409,000; ASROC, \$20,156,000; Modification of Torpedoes, \$11,740,000; Quickstrike Mine, \$16,096,000; Support Equipment and Logistics Support, \$88,360,000; Other Weapons, \$202,146,000; Other Ordnance, \$306,450,000; In all: \$5,825,171,000.], \$4,581,300,000 to remain available for obligation until September 30, [1991;]1994, of which \$114,600,000 shall be available only for the Navy Reserve and the Marine Corps Reserve.

Further, for the foregoing purposes, \$4,754,600,000, to become available for obligation on October 1, 1992 and remain available for obligation until September 30, 1995, of which \$106,300,000 shall be available only for the Navy Reserve and the Marine Corps Reserve. (10 U.S.C. 5013, 5063, 7201; Department of Defense Appropriations Act, 1991; additional authorizing legislation to be proposed.)

Summary of Requirements
(In Thousands of Dollars)

	FY 1990 Actual	FY 1991 Estimate	FY 1992 Estimate	FY 1993 Estimate
Ballistic Missiles	1,402,660	1,487,197	1,204,166	1,271,098
Other Missiles	2,775,615	2,873,173	2,222,342	2,321,667
Torpedoes and Related Equipment	805,420	837,275	689,456	652,361
Other Weapons	155,820	170,706	130,123	119,426
Ammunition	-	227,884	219,934	294,327
Spares and Repair Parts	98,502	78,509	115,279	95,721
TOTAL DIRECT PROGRAM	5,238,017	5,734,704	4,581,300	4,754,600
Reimbursable Program	75,770	70,000	70,000	74,800
TOTAL PROGRAM REQUIREMENTS	5,313,787	5,804,704	4,651,300	4,829,400

Justification of Funds

The following paragraphs provide justification for the FY 1992 program and 1993 request for the Weapons Procurement, Navy (WPN) appropriation. Initial spare parts amounts are included for information under each system or line item but are budgeted separately in the spares and repair parts category of the Budget Activity 6 justification.

BUDGET ACTIVITY 1: BALLISTIC MISSILES

(\$ in Thousands)

FY 1993 Estimate	- \$ 1,271,098
FY 1992 Estimate	- \$ 1,204,166
FY 1991 Estimate	- \$ 1,487,197
FY 1990 Actual	- \$ 1,402,660

Purpose and Scope of Work

Funds budgeted under this activity finance the procurement of fleet ballistic missiles, ancillary checkout and test equipment, missile modifications, and support equipment and facilities required to outfit and support the submarines assigned to the sea-based strategic deterrent forces.

BALLISTIC MISSILES:

(\$ in Thousands)

FY 1993 Estimate - \$ 1,268,036
FY 1992 Estimate - \$ 1,202,158
FY 1991 Estimate - \$ 1,484,794
FY 1990 Actual - \$ 1,400,330

The FY 1992 program and FY 1993 request includes continuing procurement support for the Trident I C-4 missile and for the Trident II D-5 missile, including advance procurement requirements, as noted.

Trident I (C-4) Missile

	FY 1992		FY 1993	
	Qty	Amount	Qty	Amount
Weapon System Cost		\$ 6,805		\$ 7,361
Initial Spares		1,300		1,300
Procurement Cost		\$ 8,105		\$ 8,661

The Trident mission is to provide an undersea missile system in order to ensure that the U.S. continues to maintain a credible deterrent independent of foreseeable threats in the 1990's and beyond. To accomplish this mission, the Trident I missile was developed to support two separate systems. The Trident I system is comprised of Continental United States based nuclear powered submarines equipped with long range Trident I strategic missiles and associated direct support shore facilities. The Trident I Backfit system provides Trident I missiles for backfit into existing POSEIDON submarines, thereby providing these submarines a greater range of patrol in order to insure their survivability in the event of unforeseeable enemy breakthroughs in ASW capabilities.

The FY 1992 program and FY 1993 Trident I missile request for \$6.8 and \$7.4 million respectively will provide for procurements essential to the continued support of the M-5 guidance and MK-4 reentry systems and for requalification of Trident I MK-4 flight test instrumentation production lines shut down in the mid-1980's. Restart of these lines is required to support an extended C-4 flight test program occasioned by deferral of the West Coast Trident II missile capability beyond the FY 1987 timeframe and which required an attendant extension of the C-4 missile's current expected service life of 20-25 years to 30 years.

Trident II D-5 Missile

	FY 1992		FY 1992	
	Qty	Amount	Qty	Amount
Procurement	28	\$ 977,353	31	\$1,037,675
Advance Procurement		218,000		223,000
Initial Spares		1,614		3,298
Procurement Cost	28	\$1,196,967	31	\$1,263,973

The Trident II missile will be carried on Trident Fleet Ballistic Missile submarines, ensuring that the United States will continue to maintain a highly survivable strategic deterrent for the 1990's and beyond. Deployment of the Trident II missile will (1) enhance Fleet Ballistic Missile submarine survivability by increasing sea launched ballistic missile range at full payload to exploit the total patrol area available to the Trident submarine, (2) minimize total weapon system costs by increasing sea launched ballistic missile payload to the level permitted by the size of the Trident submarine launch tube, thereby allowing mission capability to be achieved with a lesser number of submarines, (3) balance the Triad by adding efficient hard target kill capability to the sea launched ballistic missile, and (4) enhance essential equivalence with the Soviets by increasing our warhead inventory, throw weight, and accuracy in the presence of increasing Soviet capabilities and force levels.

Funding in this line is required to support the procurement of an all new Trident II missile, initial production of which commenced in FY 1987 and to which the following key program milestones apply:

- o Equipment procurements in FY 1986 through FY 1993 based on lead-time away requirements.
- o SWFLANT installation, test, checkout and equipment/facility integration began in FY 1987.
- o Began PEM missile processing at Strategic Weapons Facility, Atlantic (SWFLANT) - July 1988.
- o First Performance Evaluation Missile (PEM) flight test - March 1989.
- o Trident II missile Initial Operational Capability (IOC) - March 1990.

The FY 1992 funding of \$977.4 million supports production of 28 Trident II missiles; production of associated guidance and flight test instrumentation systems; procurement of MK-4 and MK-5 reentry systems, and support required to maintain SWPLANT's Trident II missile processing capability. The FY 1993 funding request of \$1,037.7 million will support production of an additional 31 Trident II missiles with associated guidance and flight test instrumentation systems; procurement of MK-4 and MK-5 reentry systems, and additional support required to maintain SWPLANT's Trident II missile processing capability.

Funding in both years includes reduced prices for the airframes, rocket motors and guidance systems based on participation by the United Kingdom (U.K.).

Advance Procurement

(\$ in thousands)			
		FY 1993	
Procurement Cost	FY 1992	FY 1993	
	Qty	Amount	Qty
		\$ 218,000	\$ 223,000

Funding in this line item provides for the advance procurement of various components, subassemblies and raw materials which are required to support the future production of Trident II (D-5) missiles, MK-6 guidance systems. D-5 special purpose flight test instrumentation, and reentry systems. Total advance procurement requirements comprise two major subsets of the commodity acquisition: traditional, or long lead, advance procurement, which includes those items having longer manufacturing leadtimes than the using D-5 end items; and production continuity advance procurement, which entails the purchase of certain critical components earlier than leadtimes alone would dictate in order to ensure their continuous production. These latter production continuity procurements encompass a broad range of components and materials which must be produced at minimum, uninterrupted rates on dedicated production lines as well as life-of-type or one-time quantity buys of items required to support the total planned program. The quality and homogeneity obtained by these means are essential to assure the consistent performance reliability of the missiles to be produced for the Trident II program.

SUPPORT EQUIPMENT AND FACILITIES:

(\$ in Thousands)

FY 1993 Estimate - \$ 3,062
 FY 1992 Estimate - \$ 2,008
 FY 1991 Estimate - \$ 2,403
 FY 1990 actual - \$ 2,330

The FY 1992 program and FY 1993 request includes continuing procurement support for capital maintenance projects at government-owned missile industrial facilities.

Missile Industrial Facilities

(\$ in Thousands)		
FY 1992		FY 1993
Qty	Amount	Qty
	\$ 2,008	\$ 3,062

Procurement Cost

Funding for Missile Industrial Facilities provides for capital maintenance projects at Navy-owned Naval Industrial Reserve Ordnance Plants (NIRPL) at Sunnyvale and Santa Cruz, California, and Bacchus, Utah, in support of the Fleet Ballistic Missile program.

Projects planned in FY 1992 and FY 1993 include additions and modifications to, and rehabilitation of, non-serviceable equipment and real property. Among those projects included which are generated as a result of government mandated energy conservation and environmental protection laws and by safety and security considerations, are the following: converting street lights to low pressure sodium, refurbishing fume ducts and vent fans, refurbishing fire sprinkler systems, and repairing and replacing perimeter fencing.

ACTIVITY 2: OTHER MISSILES

(\$ in Thousands)

FY 1993 Estimate	- \$ 2,321,667
FY 1992 Estimate	- \$ 2,222,342
FY 1991 Estimate	- \$ 2,873,173
FY 1990 Actual	- \$ 2,775,615

Purpose and Scope of Work

Funds budgeted under this activity finance the procurement and modification of strategic and tactical guided missiles, and aerial targets. In addition, funds provide for weapons industrial facilities and for the support of satellite communications, launches, and associated equipment for the Fleet Satellite Communications program.

Guided missiles are procured for operational inventory requirements to meet combat sustainability objectives, combat usage, quality assurance testing, and training purposes. Aerial targets are required to support training programs and to permit evaluation of missile performance. Procurement funds provide for: (1) the components that comprise the end-items, such as guidance, control, motors, warheads, and fuses; (2) effort and hardware associated with the production and assembly of these items, such as production engineering, production proofing, tools and test equipment; and (3) special handling and test equipment, training materials and other specialized items required for operational fleet support of the item.

STRATEGIC & TACTICAL MISSILES:

(\$ in Thousands)

FY 1993 Estimate	- \$ 1,541,037
FY 1992 Estimate	- \$ 1,568,921
FY 1991 Estimate	- \$ 2,395,953
FY 1990 Actual	- \$ 2,249,074

Funds budgeted under this category finance the procurement of strategic and tactical air-, surface, and submarine-launched missiles, other missile support, aerial targets, and drones and decoys.

Tomahawk Cruise Missile

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
236	\$454,123	200	\$394,217
	16,796		14,794
236	\$470,919	200	\$409,011

Tomahawk provides an attack capability against targets at sea (Antiship Tomahawk) and on land (Land Attack Tomahawk), and can be launched from both surface ships and submarines. The Land Attack version can be fitted with either conventional high explosive, nuclear warheads, or submunition dispenser. There are four Tomahawk variants (1) RGM/UGM-109A, Land Attack Nuclear; (2) RGM/UGM-109B, Antiship; (3) RGM/UGM-109C, Land Attack Conventional; and (4) RGM/UGM-109D, Land Attack Submunition Dispenser. Tomahawk is propelled by a small turbofan engine. The FY 1992 program of \$454.1 million procures 236 new production Land Attack missiles. The FY 1993 request of \$394.2 million will procure an additional 200 new production Land Attack missiles. Commencing in FY 1992, concurrent with new production, Conventional Land Attack missiles will be remanufactured to a Block III configuration. Tomahawk is competitively procured from General Dynamics/Convair and McDonnell Douglas.

AMRAAM Missile

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
191	\$205,681	159	\$140,786
	9,318		1,022
191	\$214,999	159	\$141,808

The AMRAAM (Advanced Medium Range Air-to-Air Missile) is the successor to the Sparrow missile and is being jointly procured by the Air Force and the Navy. The Air Force serves as executive service. The missile will provide an all-weather, all aspect, beyond-visual-range, air-to-air missile compatible with the F-14, F-15, F-16, F/A-18, and A-70 aircraft. AMRAAM will enhance Navy war-fighting capability in the 1990's and beyond through significant improvements in operational utility and combat effectiveness. FY 1992 program and FY 1993 require will provide missiles required to meet additional activations within the Navy.

Harpoon Missile

(\$ in Thousands)			
FY 1992		FY 1993	
	Qty	Amount	Qty
Procurement	0	\$ 37,803	0
Initial Spares			\$0
Procurement Cost	0	\$ 37,803	0
			\$0

The Harpoon is an air-, surface-, and submarine-launched cruise missile which provides an attack capability against targets at sea and on land. It uses an active or passive seeker, radar altimeter, and attitude reference assembly in conjunction with a small digital computer for missile guidance and control. It is propelled by a turbojet sustainer engine augmented by a solid booster for ship and submarine launch. The missile has a standard 13.5 inch diameter with a weight of 1,100 pounds for air launch and 1,500 pounds for ship launch. It is compatible with the Tartar, Terrier, and ASROC ship launchers as well as with aircraft and submarine launch systems. The missile is planned for use aboard the FF-1052, DDG and DD-963, CG, CGN, PHM, BB, and FFG class ships, the P-3, S-3, A-6, F/A-18, and B-52G aircraft and nuclear attack submarines. The FY 1991 program provides for 160 SLAMS (Standoff Land Attack Missiles) and represents the final procurement of Harpoon/SLAM missiles. The FY 1992 request provides for Harpoon exercise sections to support fleet training and production support necessary to sustain final SLAM deliveries.

HARM Missile

(\$ in Thousands)			
FY 1992		FY 1993	
	Qty	Amount	Qty
Procurement	749	\$210,691	215
Initial Spares		7,357	\$ 96,914
Procurement Cost	749	\$218,048	215
			\$ 96,914

The High Speed Anti-Radiation Missile (HARM) is a joint Navy and Air Force air-to-surface missile designed to suppress or destroy land- and sea-based radars supporting enemy air defense systems. HARM is a design evolution of anti-radiation missiles (ARM) such as Shrike and Standard ARM, and is replacing both missiles in the Navy inventory. HARM characteristics include: high speed, large-launch envelope, wide-band frequency coverage in a single head, high sensitivity and compatibility with various naval aircraft. Initial procurement commenced in FY 1981. The FY 1992 program and FY 1993 request continues procurement of this antiradiation missile to fill the Navy requirement. In addition, the Air Force will be procuring 465 missiles in FY 1992 and 901 missiles.

Standard Missiles (SM-2)

	(\$ in Thousands)	
	FY 1992	FY 1993
	Qty	Amount
Procurement	525	\$415,254
Initial Spares		550
Procurement Cost	525	\$424,532
		9,140
		\$443,393

The Standard Missile is a solid-propellant, tail controlled, surface-to-air and surface-to-surface missile with mid-course and semi-active homing guidance, home-on jamming capability, and proximity and contact fusing. The SM 2 Medium Range (MR) Missile will be deployed on Tartar New Threat Upgrade ships, Aegis CG 47/51 Cruisers, and Aegis DDG-51 Destroyers. The SM-2 Extended Range (ER) Missile will be deployed on Terrier CG and New Threat Upgrade ships. The SM-2 request provides for procurement of 495 SM-2 MR missiles for Aegis and 30 SM-2 missiles for Tartar ships. The FY 1993 request provides for procurement of 520 SM-2 MR missiles for Aegis ships and 30 SM-2 missiles for Tartar ships. The FY 1992 program and FY 1993 request funds SM-2 Block IV (Aegis ER) procurement and SM-2 Block IIB procurement which incorporates the Missile Homing Improvement Program (MHIP) technology.

Hellfire Missile

	(\$ in Thousands)	
	FY 1992	FY 1993
	Qty	Amount
Procurement	0	1,000
Initial Spares		\$0
Procurement Cost	0	\$0
		556
		\$ 52,281

Hellfire, developed by the Army, provides the Marine Corps with an extremely effective anti-armor weapon for use on AH-1T/J helicopters. The FY 1993 request will procure 1,000 Hellfire Optimized Missile Systems (HOMS) under a sole-source procurement strategy with the Martin Marietta Corporation. The HOMS will contain an electro-optical countermeasure (EOCM) seeker to defend against optical countermeasures, a new digital autopilot, and an electronic fuze for the robust warhead.

Penguin Missile

	(\$ in Thousands)		FY 1993	
	FY 1992		Qty	Amount
Procurement	42	\$ 44,445	0	\$0
Advance Procurement		0		
Initial Spares		1,833		
Procurement Cost	42	\$ 46,278	0	\$0

The Penguin missile is an autonomous short-range, air-to-surface weapon which is controlled by an infrared countermeasures-resistant seeker that is automatically activated when the missile reaches a preset range from the predicted position of the target. The missile is planned for use on the LAMPS MK III SH-60B helicopter as an anti-ship weapon. The MK 2 Mod 7 Penguin missile is a modification of the surface-launched MK 2 Mod 3 missile. The FY 1992 program provides for the final procurement of 42 Penguin missiles. The current acquisition strategy results in a total procurement of 106 missiles by 1992.

TOW IIA

	(\$ in Thousands)		FY 1993	
	FY 1992		Qty	Amount
Procurement	0	\$0	938	\$ 25,062

The TOW IIA (BGM-71E) missile is tube-launched, optically tracked, and wire guided. It is launched from the AH-1W helicopter and is one of the Marine Corps primary anti-armor weapons. Developed by the Army (executive service), the TOW IIA permits the continued use of this system through battlefield obscurants and at night with the incorporation of an infrared radiator and thermal beacon. The Navy version of this missile will be shipboard compatible with the incorporation of the safe and arming device for both the launch and flight motors. The FY 1993 request provides for 938 missiles and represents the initial procurement of air launched TOW IIA missiles for the Navy.

Aerial Targets

(\$ in thousands)

	FY 1992			FY 1993		
	Qty	Amount	Total	Qty	Amount	Total
BQM-34S	100	\$61,072	\$61,282	100	\$64,038	\$64,558
AQM-37C	120	23,701	23,780	120	21,952	22,034
AQM-127A				100	194,856	208,189
BQM-74C/E	195	49,077	49,264	195	51,183	51,541
Tow Targets		6,982	7,182		7,317	7,547
Other Targets		10,641	10,876		9,853	10,199
Misc Target Eq		21,355	21,780		22,306	22,716
Total		\$172,828	\$174,164		\$371,505	\$386,734

Aerial targets provide the representative threats needed to properly evaluate weapons systems and to provide for an effective Fleet Training program. The BQM-34E and BQM-74C are both recoverable, subsonic targets that are required for both surface-to-air and air-to-air missile and gunnery exercises. The AQM-37C is a non-recoverable, supersonic target, which replicates high altitude, high speed threats. The FY 1992 program and 1993 requests provide for funding for the larger targets noted, as well as tow targets, modifications for the conversion of Talos missiles into MQM-8G ER (extended range) supersonic full-scale targets, and target auxiliary/augmentation system (TAS) equipment required for target control, augmentation, and other target support costs. In addition, beginning in FY 1993 the first production lot of the AQM-127A, a recoverable Supersonic Low Altitude Target (SLAT), will be procured as a one-time economic order quantity buy for 100 targets.

Other Missile Support

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
	\$ 28,096		\$ 26,575

Procurement

The Other Missile Support Program procures Vertical Launching System (VLS) canisters and related fleet support material. VLS is a missile launching system for surface combatants, capable of launching missiles for all warfare areas and adaptable to current and future weapons control systems. The FY 1992 program and 1993 requests procure Types I and II VLS canisters for Tomahawk and SM-2 missiles.

MODIFICATION OF MISSILES

(\$ in Thousands)

FY 1993 Estimate - \$298,582
FY 1992 Estimate - \$222,425
FY 1991 Estimate - \$ 94,155
FY 1990 Actual - \$ 80,884

The following paragraphs provide justification for the FY 1992 and FY 1993 request for missile modifications and associated installation costs.

	(\$ in thousands)	
	FY 1992	FY 1993
<u>Air-Launched Missiles</u>		
Sidewinder		
Phoenix	\$ 48,313	\$ 78,736
Harpoon 1/ 2/	12,166	17,426
	37,401	34,361
<u>Surface-Launched Missiles</u>		
Tomahawk 2/	44,842	46,766
Sparrow 1/	53,258	92,651
Standard Missile	26,445	28,642
Total	\$222,425	\$298,582

1/ Sparrow and Harpoon can both be air and surface launched.
2/ Harpoon and Tomahawk can both be submarine launched.

The Sidewinder FY 1992 program and FY 1993 request provide for the Sidewinder AIM-9R upgrade to existing missiles.

The Phoenix FY 1992 program and FY 1993 request provides for expanded reprogrammable memory and composite fuze improvements to current AIM-54C inventory missiles.

The Harpoon FY 1992 program and FY 1993 Harpoon request provides for continued replacement of improved seekers, miscellaneous minor upgrades and the new Improved Harpoon kits (extended range, reattack mode) for current missiles.

The Tomahawk FY 1992 program and FY 1993 request provides for the continued procurement of the assembly, which allows submarine launched missiles a greater thrust capacity, and the new lighter weight composite capsule launch system.

The Sparrow FY 1992 program and FY 1993 request procures the Missile Homing Improvement Program (MHIP) retrofit program for both air and surface launched versions.

The Standard Missile FY 1992 program and FY 1993 request provides for the MK-56 dual thrust rocket motor and sustainer section modifications, a low altitude and directional ordnance improvement on SM-1 Block VI and SM-2 Block II missile currently in inventory, and terminal homing improvements for the SM-2 Aegis missile (Standard Missile MHIP).

SUPPORT EQUIPMENT AND FACILITIES:

(\$ in Thousands)

FY 1993 Estimate	-	\$482,048
FY 1992 Estimate	-	\$430,996
FY 1991 Estimate	-	\$383,065
FY 1990 Actual	-	\$445,657

The following paragraphs provide justification for the FY 1992 program and FY 1993 request for support equipment and facilities. This group includes the Weapons Industrial Facilities, Fleet Satellite Communications programs, Arctic Satellite Communications, and the Ordnance Support Equipment programs.

Weapons Industrial Facilities

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
	\$ 31,575		\$ 30,182

Procurement Costs

The FY 1992 program and FY 1993 request provide for missile and other ordnance producing industrial facilities, and includes environmental and emergent repairs, safety and fire protection and energy conservation and capital maintenance repairs. These funds provide for nonrecurring capital maintenance at government-owned missile and weapons producing industrial plants. The FY 1992 program and FY 1993 request maintain the Navy's Industrial Facilities which support major weapon systems production.

Fleet Satellite Communications

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
3	\$ 283,079	0	\$ 171,444

Procurement

The Fleet Satellite Communications (FLTSATCOM) system satisfies the Navy's urgent worldwide Ultra High Frequency (UHF) mobile user communication requirements. This includes protected fleet broadcast service to all Navy ships plus a command control with Anti-Submarine Warfare (ASW) platforms, Fleet Ballistic Missile (FBM) submarines, aircraft carriers, cruisers and other selected aircraft, ships and submarines. The system also satisfies the Air Force equatorial satellite communication requirements including presidential airborne command posts, Strategic Air Command and emergency mission support. Beginning in the early 1990's, UHF Follow-On satellites will replace the existing constellation as it reaches the end of its expected operational lifetime.

The FY 1992 program and FY 1993 request provides for the procurement of three UHF Follow-on satellites (the seventh through the ninth in the total program), production support, launch services, and recurring efforts for the four EHF packages. The FY 1993 program primarily funds launch vehicle services payments for UHF Follow-on satellites. The basic requirement is for nine satellites on orbit. The fixed price prime contract with Hughes Aircraft Company was awarded in FY 1988 for the first satellite. The multiyear option was executed in FY 1989 and includes eight satellites plus an option for one spare. Additionally, the FY 1992 program and FY 1993 request provide for the procurement of three leased satellites (LEASAT) currently in operational orbit, upon the expiration of their lease period.

Arctic Satellite Communications

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
0	\$ 3,728	0	\$ 18,273
Procurement			

The Arctic Satellite Communications program provides for the procurement of satellites, launch services and ground support to replace currently deployed Arctic Satellites.

Ordnance Support Equipment

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
	\$112,614		\$262,149
Procurement Costs			

Detail justification is classified and is provided separately.

BUDGET ACTIVITY 3: TORPEDOES AND RELATED EQUIPMENT

(\$ in Thousands)

FY 1993 Estimate - \$ 652,361
 FY 1992 Estimate - \$ 689,456
 FY 1991 Estimate - \$ 857,275
 FY 1990 Actual - \$ 805,420

Purpose and Scope of Work

These funds provide for the procurement of anti-submarine and anti-ship weapons such as torpedoes, mines and underwater targets, torpedo and mine modifications, and associated support equipment items related to production, as well as acquisition of other equipment and support necessary to maintain fleet readiness.

TORPEDOES AND TARGETS:

(\$ in Thousands)

FY 1993 Estimate - \$ 502,433
 FY 1992 Estimate - \$ 581,490
 FY 1991 Estimate - \$ 721,431
 FY 1990 Actual - \$ 732,592

MK-48 Torpedo Advanced Capability (ADCAP)

	FY 1992		FY 1993	
	Qty	Amount	Qty	Amount
Procurement	108	\$220,833	108	\$192,273
Advance Procurement		74,490		0
Initial Spares		19,197		4,701
Procurement Cost	108	\$314,520	108	\$196,974

The MK-48 ADCAP (Advanced Capability) heavyweight torpedo was developed as an improvement to the MK-48 torpedo to counter enemy submarine threats through the 1990's. The improvements in the guidance and control systems will significantly improve the MK-48 torpedo's capability. Improvements in the propulsion system will allow the torpedo to go faster, deeper and farther than the current MK-48 torpedo and will allow the ADCAP to operate in several adverse environments. The FY 1992 through FY 1994 program request procurement under a 3-year winner-take-all multi-year contract.

MK-50 Advanced Lightweight Torpedo (ALWT)

	FY 1992		FY 1993	
	Qty	Amount	Qty	Amount
Procurement	246	\$261,663	264	\$270,891
Initial Spares		12,207		15,632
Procurement Cost	246	\$273,870	264	\$286,523

The MK-50 Advanced Lightweight Torpedo (ALWT) is a lightweight acoustic homing torpedo, that is capable of countering present and forecast submarine threats. It will gradually replace the MK 46 Torpedo over a 15 year period and will become the primary ASW weapon for approximately 740 aircraft and 250 ships. Platforms that will employ the MK 50 Torpedo consist of: (a) fixed-wing ASW aircraft, (b) ASW helicopters, (c) ASW surface ships equipped with Surface Vessel Torpedo Tubes (SVTTs). FY 1992 and FY 1993 will be fixed price contracts.

ASW Targets

	FY 1992		FY 1993	
	Qty	Amount	Qty	Amount
Procurement		\$ 18,371		\$ 37,122

The ASW Targets program was established to provide training exercise capability for torpedo firings and ASW detection and tracking. This program procures two types of ASW targets, the heavyweight MK-30 Mobile Target and the lightweight, portable MK-39 Expendable Mobile ASW Training Target (EMATT).

The MK-30 Mobile Target provides air, surface and submarine ASW units with the means to conduct realistic exercise firings on three-dimensional underwater ranges. This target provides the basic training capability to exercise surface ship and submarine sonars, actively and passively fired torpedoes, and aircraft equipped with sonobuoys and Magnetic Anomaly Detection (MAD) gear. The FY 1992 program and the FY 1993 request provide three MK-30 Mobile Targets each year.

The MK-39 EMATT is a small, self propelled underwater vehicle in continuous operation and whose trajectory is programmable. EMATT is detectable and trackable by passive towed arrays, active and passive sonobuoys, active sonars, the MK 46 torpedo in an active mode, and MAD-equipped aircraft. The FY 1992 program provides for 1,100 EMATT units while the FY 1993 request provides for 5,100 EMATT units.

ASROC

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
	\$ 2,877		\$2,147

Procurement Cost

The Anti-Submarine-Rocket (ASROC) is a weapon system designed around a range-controlled, unguided rocket missile which carries a torpedo or a depth charge as a payload. ASROC is utilized by most surface combatants to defend against high performance enemy submarines. The FY 1992 program and FY 1993 request provide for procurement for ASROC components to replace those expenditures consumed during fleet training exercises.

Vertical Launched ASROC

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
	\$ 3,256		\$ 0

Procurement Cost

Vertical launched ASROC (VLA) is a replacement system for the older ASROC weapon system. It will provide a vertically launched weapon to a greater distance with equal accuracy utilizing the latest torpedo/depth charge configuration. The FY 1992 request provides for production engineering to support the FY 1989 missile procurement through the delivery period.

MODIFICATION OF TORPEDOES AND RELATED EQUIPMENT:

	(\$ in Thousands)
FY 1993 Estimate -	\$ 61,343
FY 1992 Estimate -	\$ 22,565
FY 1991 Estimate -	\$ 27,511
FY 1990 Actual -	\$ 9,649

MK-46 Torpedo Mods

	(\$ in Thousands)	
	FY 1992	FY 1993
Procurement	Qty	Qty
Initial Spares	Amount	Amount
Procurement Cost	\$ 9,873	\$ 50,526
	211	0
	10,084	50,526

The MK-46 torpedo is a lightweight torpedo launched from surface vessel torpedo tubes, ASROC, and fixed and rotary wing aircraft. The FY 1992 program and FY 1993 request for \$10.8 million procure block upgrade modifications, including an anti-tampering mechanism for the MK-46 Mod 5. Additionally, the FY 1993 budget request initiates a \$39.7 million procurement of Ordalt kits that will convert the MK 46 Mod 5 to the MK 46 Mod 7 configuration.

Quickstrike Mine

	(\$ in Thousands)		
	FY 1992	FY 1993	
	Qty	Amount	Qty Amount
Procurement		\$11,366	\$ 9,465
Initial Spares		872	211
Procurement Cost		\$12,238	\$ 9,676

The Quickstrike Mine FY 1992 program and FY 1993 request provides for the procurement of the 2,000 pound MK-65 service and non-service mines to include the MK-58 Target Detecting Devices (TDD's) and associated safety and arming devices compatible with existing bomb cases. By combining the TDD's with bomb cases, Quickstrike mines are created. This provides maximum flexibility for bombs which are carried on board the aircraft carriers to be used as either bombs or mines.

MK-60 Captor Mods

	(\$ in Thousands)		
	FY 1992	FY 1993	
	Qty	Amount	Qty Amount
Procurement		\$ 1,326	\$ 1,352

The Captor Mods program provides for the conversion of additional MK-46 torpedoes required to support the maintenance and turnaround schedule requirements necessary to maintain the CAPTOR fleet stockpiles.

SUPPORT EQUIPMENT:

(\$ in Thousands)	
FY 1993 Estimate -	\$ 88,585
FY 1992 Estimate -	\$ 85,401
FY 1991 Estimate -	\$ 88,333
FY 1990 Actual -	\$ 63,179

The following paragraphs provide justification for the FY 1992 program and the FY 1993 request for support equipment. This group includes the Torpedo Support Equipment, the ASW Range Support, and First Destination Transportation program.

Torpedo Support Equipment

(\$ in Thousands)		
FY 1992		FY 1993
Qty	Amount	Qty
	\$ 48,453	\$ 50,685

Procurement Cost

The program procures components necessary to restore weapons used to conduct fleet training exercises (which involves the actual firing of torpedoes) back to a ready-for-issue warshot status. This request supports combat-ready deployment of anti-submarine warfare forces. The funds requested procure such expended components as batteries, pressure cylinders, propellant assemblies and various air-launch accessories; equipment and components worn out or lost during repeated service such as exercise heads and fuel tanks; and production support efforts associated with the above procurements. Procurement quantities of these items vary each year and are dependent upon fleet training requirement and the tempo of operations. The FY 1992 request and FY 1993 request procures material required to support fleet training exercises and operational inventories for the MK-46, MK-48/MK-48 ADCAP torpedoes and exercise turnaround kits for the MK-50 Advanced Lightweight Torpedo.

ASV Range Support

	(\$ in Thousands)	
	FY 1992	FY 1993
Procurement	Qty	Qty
Initial Spares	Amount	Amount
Procurement Cost	\$ 27,989	\$ 28,535
	856	896
	\$ 28,845	\$ 29,434

The Anti-Submarine Warfare (ASW) Range Support program provides for the procurement of range proofing and fleet support equipments required for use on the Navy's underwater ranges and for the fixed costs of on-range proofing services. This includes the procurement of pingers, transponders, MK-30 and MK-27 target exercise components and other related items. This line item supports fleet exercises and torpedo firings and provides equipment to maintain ASW readiness.

First Destination Transportation

	(\$ in Thousands)	
	FY 1992	FY 1993
Procurement	Qty	Qty
	Amount	Amount
	\$ 8,959	\$ 9,362

The First Destination Transportation program provides for the movement of newly procured equipment and material from the contractor's plant to the initial point of receipt by the government for subsequent shipment to its final destination.

BUDGET ACTIVITY 4: OTHER WEAPONS

(\$ in Thousands)

FY 1993 Estimate - \$ 119,426
FY 1992 Estimate - \$ 130,123
FY 1991 Estimate - \$ 170,706
FY 1990 Actual - \$ 155,820

Purpose and Scope of Work

Funds budgeted under this activity finance the procurement of guns and gun mounts for Navy and Coast Guard ships, as well as modifications.

GUNS AND GUN MOUNTS:

(\$ in Thousands)

FY 1993 Estimate - \$ 36,651
FY 1992 Estimate - \$ 45,668
FY 1991 Estimate - \$ 75,897
FY 1990 Actual - \$ 77,026

MK-15 Close-In-Weapon System (CIWS)

	FY 1992		FY 1993	
	Qty	Amount	Qty	Amount
Procurement	0	\$ 506	0	\$ 0
Initial Spares		0		0
Procurement Cost	0	\$ 506	0	\$ 0

The MK-15 Close-in-Weapon System (CIWS) Phalanx is a fast reaction, terminal defense against low flying aircraft and anti-ship missiles penetrating other fleet defensive systems. The system is an automatic, self-contained unit consisting of search and track radar, a digital fire control system and a 20mm M61A1 gun which automatically detects, evaluates, tracks, engages, assesses kill and returns to search mode. The system will be installed in over 300 ships, both new construction and retrofit. The FY 1992 program provides for production support services for the prior year procurements until the guns are delivered.

MK-19 40mm Machine Gun

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
568	\$11,905	0	\$0

Procurement

The MK-19 Mod 3 40mm machine gun provides a more effective, safe and reliable grenade firing weapon for arming surface ships, small craft, construction battalions and special warfare units. The FY 1992 program completes the buy-out of the Navy's inventory.

MK-38 25mm Gun System

(\$ in Thousands)				
	FY 1992		FY 1993	
	Qty	Amount	Qty	Amount
Procurement	55	\$ 10,009	55	\$ 11,562
Initial Spares		614		632
Procurement Cost	55	\$ 10,623	55	\$ 12,194

The MK-38 25mm gun system is a single barrel, 25mm M242 automatic gun mounted on a manually operated MK-88 deck mount and is the planned replacement weapon for the MK-16 20mm machine gun. The MK-38 system serves as a short range defensive and offensive armament for surface ships and small craft. The FY 1992 program and FY 1993 request procure 55 systems in each year.

Small Arms and Weapons

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
	\$ 24,058		\$ 25,089

Procurement

This program procures a wide variety of small arms and weapons, including rifles, 9mm pistols, shotguns, .50 caliber machine guns, and 7.62mm machine guns. These small arms support security training, over 2,600 ship and shore activities, mobile construction battalion units, special warfare units, and crisis response teams throughout the Navy.

MODIFICATION OF GUNS AND GUN MOUNTS:

(\$ in Thousands)

FY 1993 Estimate - \$ 82,775
 FY 1992 Estimate - \$ 84,455
 FY 1991 Estimate - \$ 94,809
 FY 1990 Actual - \$ 78,794

Funds budgeted under this activity finance the procurement of gun and gun mount modifications.

MK-15 Close-In-Weapon System (CIWS) Modifications

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
Procurement	\$ 56,969		\$ 60,462
Initial Spares	3,333		5,718
Procurement Cost	\$ 60,302		\$ 66,180

The MK-15 Close-in-Weapon System (CIWS) modifications requested in FY 1992 and FY 1993 provide for upgrading to the Baseline 2 configuration, and includes increased magazine capacity, search elevation angle, and various other modifications, such as reliability and maintainability improvements. Improvements are backfit into MK-15 CIWS systems procured prior to FY 1985, as well as trainers.

5"/54 Gun Mount Modifications

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
Procurement Cost	\$ 17,351		\$ 11,461
Initial Spares	4,824		8,410
Procurement Cost	\$ 22,175		\$ 19,871

This program procures hardware to improve the operability, reliability, maintainability and availability of all in-service 5 inch 54 caliber gun mounts.

MK-75 76mm Gun Mount Modifications

	(\$ in Thousands)	
	FY 1992	FY 1993
	Qty	Qty
	Amount	Amount
Procurement Cost	\$ 7,653	\$ 8,123
Initial Spares	804	618
Procurement Cost	\$ 8,457	\$ 8,741

This program procures hardware to improve the safety, operability, reliability, maintainability, survivability and shock and vibration capabilities for all in-service MK-75 76mm gun mounts.

Modifications Under \$2 Million

	(\$ in Thousands)	
	FY 1992	FY 1993
	Qty	Qty
	Amount	Amount
Procurement Cost	\$ 2,482	\$ 2,729

This program procures hardware to improve the safety, operability, reliability, maintainability and availability of all in-service 16 inch/50 caliber and 5 inch/38 caliber gun mounts.

BUDGET ACTIVITY 5: OTHER ORDNANCE

	(\$ in Thousands)
FY 1993 Estimate	- \$294,327
FY 1992 Estimate	- \$219,934
FY 1991 Estimate	- \$227,844
FY 1990 Actual	- \$ *

Purpose and Scope of Work

These funds support procurement of all air-delivered ordnance, ship gun ammunition, and other expendable ordnance required for the Navy forces and Marine Air Wings, except guided missiles. This program has been transferred from the Other Procurement, Navy (OPN) appropriation beginning in FY 1991 to ammunitions funding in the Weapons Procurement, Navy appropriation.

AIR LAUNCHED ORDNANCE:

These funds support procurement of all air-delivered ordnance required for the Navy forces and Marine Air Wings.

(\$ in Thousands)

FY 1993 Estimate	- \$ 147,219
FY 1992 Estimate	- \$ 86,512
FY 1991 Estimate	- \$ 107,803
FY 1990 Actual	- \$ *

General Purpose Bombs

	(\$ in Thousands)	
	FY 1992	FY 1993
Procurement Cost	Qty Amount	Qty Amount
	\$ 42,162	\$ 68,104

These funds will procure various components for the Navy's present MK-80 series general purpose bombs and fins. The FY 1992 program and FY 1993 request provide for the procurement of 500-pound BLU-111 thermally protected (TP) PBX filled bombs and other components including: BSU-86 fins, MK-83 conical fins solid nose plugs, and various wires and adapters.

* Budgeted in Other Procurement, Navy in FY 1990 and prior years.

Practice Bombs

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
	\$15,888		\$ 31,143

Procurement Cost

This program will procure various practice bombs and components in support of Fleet training requirements. The FY 1992 program and FY 1993 request includes MK-76 and BDU-48 bombs used for training pilots in the delivery of unretarded MK-80 series bombs and in retarded and lay-down deliveries; full-sized MK-80 series inert bombs, including the BDU-45 NTP (MK-80) and the MK-83 Inert NTP. Additionally, FY 1992 program and FY 1993 request procures CXU-3 and MK-4 signals, which provide smoke markings upon bomb impact; production engineering support, production engineering support, and product improvements.

Gator

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
	\$ 9,567		\$ 9,776

Procurement Cost

Gator is an air delivered scatterable anti-tank and anti-personnel land mine dispersal weapon. Delivered from high performance aircraft, the mines delay, deny, attrite, and disrupt the use of movement of enemy armor/mechanized forces. The disperser contains 60 mines (45 anti-tank and 15 anti-personnel).

SHIP ORDNANCE:

These funds support procurement of all ship gun ammunition required for the Navy forces, except guided missiles.

(\$ in Thousands)

FY 1993 Estimate - \$122,761
 FY 1992 Estimate - \$105,277
 FY 1991 Estimate - \$ 83,549
 FY 1990 Actual - *

Ship Gun Ammunition (P-1 Line Items 63 Through 71)

(\$ in Thousands)		
FY 1992		FY 1993
Qty	Amount	Qty
	\$105,277	\$122,761

Procurement Cost

The FY 1992 program and 1993 request provide for procurement of various types of Ship Gun Ammunition including:

	(\$ In Thousands)	
	FY 1992	FY 1993
5 Inch/54 Caliber Ammunition	\$ 49,407	\$ 65,433
CIWS Ammunition	12,023	15,757
76mm Ammunition	8,941	11,245
Other Ship Gun Ammunition	34,906	30,326
Total	\$105,277	122,761

The 5 inch ammunition is the most common and is used by nearly all of the Navy's combatant ships. The 20mm ammunition for CIWS is used against low flying aircraft and anti-ship missiles penetrating other fleet defensive systems. The CIWS service round is being procured at a minimum rate in FY 1992 and FY 1993 in anticipation that a low cost CIWS ballistically - matched training round will enter production in FY 1993. The 76mm ammunition is used against air targets. Other ship gun ammunition provide for close in defense of ships.

* Budgeted in Other Procurement, Navy in FY 1990 and prior years.

OTHER ORDNANCE:

(\$ in Thousands)

FY 1993 Estimate - \$ 24,347
 FY 1992 Estimate - \$ 28,145
 FY 1991 Estimate - \$ 36,492
 FY 1990 Actual - \$ *

Other Ordnance

	(\$ in Thousands)	
	FY 1992	FY 1993
	Amount	Amount
Small Arms and Landing Party Ammunition	\$ 13,492	\$ 3,558
Pyrotechnics and Demolition Materials	14,653	20,789

The FY 1992 program and FY 1993 request includes procurement of Small Arms & Landing Party Ammunition, and Pyrotechnics and Demolition Materials. The Small Arms and Landing Party Ammo request provides ammunition in support of active naval vessels, and for active and reserve special warfare forces, including replacement of Non-Combat Expenditure Requirements (NCER), initial allowance for all approved active and reserve forces, and a combat reserve and/or material pipeline of ammunition quantities based on a "Days of Support" analysis. Pyrotechnics and Demolition Material provides pyrotechnics and demolition materials for all active naval vessels, amphibious and mobile construction battalions, harbor clearance units, cargo handling and port groups.

* Budgeted in Other Procurement, Navy in FY 1990 and prior years.

BUDGET ACTIVITY 6: SPARE AND REPAIR PARTS

(\$ in Thousands)
 FY 1993 Estimate - \$ 95,721
 FY 1992 Estimate - \$ 115,279
 FY 1991 Estimate - \$ 78,509
 FY 1990 Actual - \$ 98,502

Purpose and Scope of Work

Funds budgeted under this activity finance the procurement of spare and repair parts for Weapons Procurement, Navy (VPN) weapons systems. These spare parts are required to maintain the weapon system prior to the Material Support Date (MSD) after which spares support is provided through the Navy Supply System.

Initial Spares

(\$ in Thousands)		
FY 1992		FY 1993
Qty	Amount	Qty
	\$ 91,750	Amount
		\$ 82,157

Procurement Cost

These funds provide initial spare and repair parts for missile, torpedo and weapon systems procured in this appropriation. Requirements are determined by detailed provisioning procedures that include a wide range of factors about end item usage, usage rate trends, engineering judgment and repairable item turnaround time.

Replenishment Spares

(\$ in Thousands)		
FY 1992		FY 1993
Qty	Amount	Qty
	\$ 23,529	Amount
		\$ 13,564

Procurement Cost

These funds provide replenishment spare and repair parts for missile, torpedo and weapon systems procured in this appropriation. Requirements are determined by stratification techniques which include the number of end items in the fleet, repair usage data, Ready-for-Issue (RFI) spares returning from rework/repair programs and equipment lead times.